

YEMEL'YANOV, A.
RYTCHENKO, V., inzh.; YEMEL'YANOV, A., inzh.

The LM-1 voltammeter. Avt. transp. 36 no.2:14 P '58. (MIRA 11:2)
(Electric motors)

KAZANSKIY, A., instruktor politchasti polyarnoy aviatsii, YEMEL'YANOV, A.,
instruktor politchasti polyarnoy aviatsii.

Initiators of flights without navigators. Mor. flet 18 no.5:22-23
My '58. (MIRA 11:6)
(Navigation (Aeronautics)) (Arctic regions--Aerial exploration)

YEMEL'YANOV, A.

Fires in multistory buildings. Pozh.delo 6 no.4:16-18 Ap '60.
(MIRA 13:11)

1. Nachal'nik otдела Upravleniya požarnoy okhrany Mosgorispolkoma.
(Buildings--Fires and fire prevention)

YEMEL'YANOV, A., kand.tekhn.nauk; RAZYKOV, R., inzh.

Testing the air and water permeability of joints of exterior
walls in large-panel buildings. Zhil.stroi. no.8:13-16 Ag '61.
(MIRA 14:8)

(Walls)

YEMEL'YANOV, A., inzh.

Increase labor productivity and lower operating costs at grain
receiving stations. Muk.-elev. prom. 24 no.7:14-15 J1 '58.
(MIRA 11:10)

1. Kuybyshevskaya normativno-issledovatel'skaya stantsiya.
(Grain trade)

YEMEL'YANOV, A.

Conference on the subject "Moral image of the Soviet nurse". Med.
sestra 21 no.4:60-61 Ap '62. (MIRA 15:4)
(NURSES AND NURSING)

DOMANOV, V. (Moskva); POKROVSKIY, F. (Moskva); KOZHUKHAREV, I. (Minsk)
KARMAZONOV, A. (Chelyabinsk); POZDNYAKOV, V. (Leningrad);
YEMEL'YANOV, A. (Krasnodar); PUGOVKIN, Ye. (Astrakhan');
CHUPAKOV, A.

Suggestions of the readers. Radio no.8:55 Ag '60. (MIRA 13:9)
(Radio)

YEMEL'YANOV, A. (Yaroslavl')

When one limits himself to directives. Voen. znan. 40 no.6:
29-30 Je '64. (MIRA 17:7)

VOL'SKIY, V.; GRIDCHIN, I.; YEMEL'YANOV, A.; RABAN, V.(Lutsk); VOLOSHINSKIY, V.
(Lutsk)

Exchange of news and experience. Izobr. i rats. no.7:18-19 JI '62.
(MIFA 16:3)

1. Sotrudnik zhurnala "Nauka i tekhnika", Riga (for Vol'skiy).
2. Otvetstvennyy sekretar' gazety "Put' Oktyabrya", Lugansk (for Gridchin).
3. Predsedatel' soveta Vsesoyuznogo obshchestva izobretateley i ratsionalizatorov, Orenburgskogo shelkokombinata (for Yemel'yanov).
(Technological innovations)

YEMEL'YANOV, A. (Yaroslavl')

Good sailing! Voen.znan. 41 no.11:43-44 N '65.

(MIRA 18:12)

YEMEL'YANOV, A., kand.tekhn.nauk.

What did studies of sealed joints show? Na stroi. Ros. 4 no.1:27-28
Ja '63. (MIRA 16,3)

(Building—Details)

YEMEL'YANOV, A.

* Light in the taiga. Voen. znan. 39 no.5:20 My '63. (MIRA 16:5)
(Achinsk region—Military education)

YEMEL'YANOV, A.

Friends of communist brigades. WFO 5 no.3:27-30 Mr '63.
(MIRA 16:4)

1. Spetsial'nyy korrespondent zhurnala "Nauchno-tekhnicheskiye
obshchestva SSSR".
(Minsk—Tractor industry—Technological innovations)

YEMEL'YANOV, A., mayor, voyenny letchik vtorogo klassa

Additional reconnaissance of moving targets. Av.1 kosm. 45
no.2:47-49 F '63. (MIRA 16:2)
(Aeronautics, Military--Observations)

YEMEL'YANOV, A., kand.tekhn.nauk

Expansion joints in large-panel buildings. Zhil. stroi. no.2:
22-24 '63. (MIRA 16:3)

(Building--Details)

YEMEL'YANOV, A., kand.tekhn.nauk

Engineering abroad, Grazhd.av. 20 no.4:31 Ap '63. (MIRA 16:5)
(Aeronautics, Commercial)

YEMEL'YANOV, A.

The people of Roslavl' are learning. Voen. znan. 40 no.8:20-21
Ag '64. (MIRA 17:11)

1. Zamestitel' predsedatelya Smolenskogo oblastnogo komiteta
Vsesoyuznogo dobrovol'nogo obshchestva sodeystviya armii,
aviatsii i floty po orgmassovoy rabote i propagande.

YEMEL'YANOV, A.A.

Resection of the common carotid artery in extensive operations
for malignant tumors of the upper respiratory tract. Zhur.ush.,
nos.1 gorl.bol. 22 no.2:68-72 JI-Ag '62. (MIRA 16:2)

1. Iz otorinolaringologicheskogo otdeleniya (zav. - prof. N.A.
Karpov) Instituta onkologii AMN SSSR.
(RESPIRATORY ORGANS—CANCER) (CAROTID ARTERY—EXCISION)

MANSILIN, V.V.; MANAKOV, N.Kh.; AGAFONOV, A.V.; VASILENKO, V.P.;
MASLOV, I.Ya.; KNYAZEV, V.S.; Primali uchastiye: EZLOUSOVA, I.Y.;
HEREZOVSKIY, V.D.; BOL'SHAKOVA, K.A.; YEMEL'YANOV, A.A.;
ZEFIROVA, Ye.G.; NEMETS, L.L.; OKINSHEVICH, N.A.; RYABOV, V.M.;
STEPANENKO, I.A.; STOLYARENKO, Ye.G.; SOLOTSINSKIY, S.Ye.;
KHRAMOV, A.Ye.; CHELOGUZOVA, Ye.F.

Engineering development of a new system of catalytic cracking
in a fluidized bed. Khim.i tekhn.topl.i masel 7 no.6:41-50
Je '62. (MIRA 15:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut po pererabotke
nefti i gazov i polucheniyu iskusstvennogo zhidkogo topliva.
(Cracking process)
(Fluidization)

YEMP 'YANG / A A

U S S R .

Synthesis and investigation of some diphenylbutane initiators of polymerization. H. N. Mironov and A. A. Finkel'son, *Vysokomol. Soedin.* 1964, No. 7, 179-82. Refers: *Zhur.* *Khim.* 1964. 1-methyl-2,3-diphenylbutane (I) was synthesized from a soln. of 8 g. of acetyl peroxide (II) in 4 g. of benzene to 19 g. of III over a period of 4 hr. Yield of III was 52%. Nitration of I with HNO₃ in 10% H₂SO₄ gave dimethyldinitrodiphenylbutane (IV) in 78% yield. By similar method, 2,2,3,3-tetrachlorodiphenylbutane (V) and 2,2,3,3-tetrabromodiphenylbutane (VI) were not synthesized from II and 1,1-diphenylethane. I and IV did not induce polymerization of CH₂=C(Me)CO₂Me.

M. H.

YEMEL'YANOV, A.A.

56-3-46/59

AUTHORS: Yemel'yanov, A.A., Rozental', I.L.

TITLE: On the Part Played by Nucleons in the Processes of the Multiple Production of Particles (O roli nuklonov v protsessakh mnozhestvennogo obrazovaniya chastits) (Letter to the Editor)

PERIODICAL: Zhurnal Eksperim. i Teoret. Fiziki, 1957, Vol. 33, Nr 3 (9), pp. 808 - 809 (USSR)

ABSTRACT: In the processes of the simple production of particles on the occasion of collisions of nucleons of high energy with nuclei the nucleons play a special part with respect to the mesons. Apart from the conservation of the nuclear charge and the mass difference between nucleons and mesons, a less distinctly marked peculiarity must be pointed out, which manifests itself mainly in connection with the hydromechanical description of the phenomenon. At energies of the primary nucleon of $E_0 = 10^{12} - 10^{13}$ eV the temperature of the hydrodynamical stage of expansion amounts to 1 to 2 Mc^2 (M - mass of the nucleon), in which case $T \gg \mu c^2$ (μ - mass of the pion). At these energies the probability of the creation of nucleon - antinucleon pairs during the entire duration of the processes is very low. The authors here

Card 1/3

On the Part Played by Nucleons in the Processes of the Multiple Production of Particles

56-3-46/59

describe a simplified model of the flying apart of the system. The authors investigate the capture collision of a nucleon with a nucleon. With interaction between nucleons a meson cloud is produced, which is compressed non-adiabatically by the nucleons as a "piston". In the system thus produced the kinetic energy of the nucleons is separated in the very narrow volume lying between them. The present work investigates the part of energy carried away by the fast nucleon. For the solution of this problem the relativistic hydrodynamical equations $\partial T_{ik} / \partial x_k = 0$, $T_{ik} = w u_i u_k + p g_{ik}$ are investigated here. Here $w = \epsilon + p$ denotes the thermal function of the unit volume, u_i - the four-velocity, and it is true that $g_{11} = g_{22} = g_{33} = 1$, $g_{44} = -1$, $x_i = x, y, z, ict$. In addition there is a boundary condition. For $E_0 = 10^{11} - 10^{12}$ eV it is sufficient to determine the solution for a simple wave within range of the not trivial motion. By solution of the equation of motion of the nucleon it is possible to obtain the energy E_k of the nucleon at the moment of the decay of the system. At $E = 10^{11}$ eV and $E = 10^{12}$ eV the values $E_k \sim 0,3 \cdot 10^{11}$ and $0,2 \cdot 10^{12}$ eV respectively were obtained in the laboratory system. The dependence on the energy of the fast nucleon has

Card 2/3

On the Part Played by Nucleons in the Processes of the Multiple Production of
Particles

56-3-46/59

the shape $E_k/E_0 \sim E_0^{-1/15}$. It further applies that $E_k \sim v^{-0,4}$
(v - volume). There are 4 Slavic references.

ASSOCIATION: Physics Institute imeni P.N. Lebedev AN USSR
(Fizicheskii institut imeni P.N. Lebedeva Akademii nauk SSSR)

SUBMITTED: June 20, 1957

AVAILABLE: Library of Congress

Card 3/3

AUTHOR: Yemel'yanov, A. A.

56-2-39/51

TITLE: On the Spatial Distribution of Photons in the Vicinity of the Axis of Wide Atmospheric Showers (O prostranstvennom raspredelenii fotonov vblizi osi shirokikh atmosferykh livney)

PERIODICAL: Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, 1958, Vol. 34, Nr 2, pp. 516 - 518 (USSR)

ABSTRACT: As is known the calculation of the function of spatial distribution of the soft components of wide atmospheric showers taking into account avalanche processes as well as ionization losses are very difficult. But with small r the high-energy particles play the main part and the ionization losses of these particles can be neglected. Here the author determines the photon-density corresponding to such an electron distribution. For this purpose one of the Landau equations is used. For the solution of this problem it is sufficient to put $\varphi_{\text{rad}}(E'E) = 1/E$. $\varphi_{\text{rad}}(E'E)$ denotes the probability of the emission of a photon with an energy

Card 1/3

56-2-39/51

On the Spatial Distribution of Photons in the Vicinity of the Axis of Wide Atmospheric Showers

E by an electron with the energy E' . The equation resulting from the integration over all angles θ as well as the azimuth in the level being at right angles to the shower axis are mentioned in detail. The solution found by taking into account a boundary condition is given in detail. Finally the author determines the ratio $N_1/N \sim \ln(E_k/rE)$. Here N_1 means the number of photons with an energy E_k exceeding the energy given. $N(t, E, r)$ is the function of spatial distribution of the electrons with an energy exceeding that given with a neglecting of the ionization losses. The following example can easily be computed: At $E = 10^8$ eV N_1/N about 7-8 is found in 1 m distance from the shower axis with high-energy of $E_0 = 10^{14}$ eV of the primary electron. This effect can be explained by the fact that the electrons being in the vicinity of the shower axis are accompanied by many photons. With sufficiently great distances also the ionization losses must be taken into account. There are 6 references, 4 of which are Slavic.

Card 2/3

On the Spatial Distribution of Photons in the Vicinity of the Axis of Wide
Atmospheric Showers

56-2-39/51

ASSOCIATION: **Institute of Physics** imeni P. N. Lebedev AS USSR
(Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR)

SUBMITTED: November 20, 1957

AVAILABLE: Library of Congress

1. Photons-Distribution
2. Photon-Density
3. Electrons-Distribution

Card 3/3

21(7), 24(5)

AUTHOR:

Yemel'yanov, A. A.

SOV/56-36-5-40/76

TITLE:

On the Role of Viscosity in the Hydrodynamical Theory of the Multiple Production of Particles (O roli v'язkosti v gidrodinamicheskoy teorii mnozhestvennogo obrazovaniya chastits)

PERIODICAL:

Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1959, Vol 36, Nr 5, pp 1550-1554 (USSR)

ABSTRACT:

In Landau's hydrodynamical theory of multiple particle production in collisions of high-energy nucleons, the process of the expansion of the meson-nucleon cloud is described as the dispersion of an ideal ultrarelativistic liquid. Though the theoretical results are, on the whole, in agreement with those obtained by experiment, the theory for the angular distribution of secondary particles results in greater anisotropy than was found experimentally. In this connection the author investigates the expansion of such a system on the basis of the model of a viscous ultrarelativistic liquid. As a result of energy dissipation occurring in the motion of the viscous liquid, the entropy of the system increases, and therefore additional particles are created in an expanding meson cloud, in deviation from Landau's theory. An investigation of the dissipative processes within the

Card 1/3

On the Role of Viscosity in the Hydrodynamical Theory of the SOV/56-36-5-40/76
Multiple Production of Particles

framework of hydrodynamics leads to the formation of new parameters - phenomenological coefficients of viscosity, thermal conductivity, etc. In the present investigation the author calculates only the viscosity coefficient of a given quantity and determines its influence on the characteristic of the elementary act. A comparison between theoretical and experimental results shows the necessity of empirically evaluating the viscosity coefficient. The problem of the part played by viscosity in the hydrodynamical theory of the multiple production of particles has already been investigated by Hamaguchi, whose papers are criticized by the author. A number of inaccuracies is specially mentioned and discussed. He himself investigates the problem of the onedimensional symmetric widening of a plane infinite layer of little thickness in a vacuum in consideration of viscosity, and presents an asymptotic solution of the onedimensional equations. He shows that consideration of viscosity in the angular distribution of secondary particles leads to less strong anisotropy than if an ideal fluid is considered. The author thanks I. L. Rozental' for his advice and assistance, and further also G. A. Milekhin and D. S. Chernavskiy

Card 2/3

On the Role of Viscosity in the Hydrodynamical Theory of SOV/56-36-5-40/76
the Multiple Production of Particles

for discussions. There are 8 references, 5 of which are Soviet.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR
(Physics Institute imeni P. N. Lebedev of the Academy of
Sciences, USSR)

SUBMITTED: December 7, 1958

Card 3/3

YEMEL'YANOV, A.A.; CHERNAVSKIY, D.S.

Effect of viscosity in multiple production on the energy distribution of secondary particles. Zhur.eksp.i teor.fiz. 37 no.4:1058-1061 O '59. (MIRA 13:5)

1. Fizicheskiy institut imeni P.N.Lobedeva Akademii nauk SSSR.
(Nuclear reactions)

Yemelyanov, A. A.

HIGH ENERGY

MESON SHOWERS

A. A. Yemelyanov, I. L. Rosental

Experimental data on μ -meson showers observed under heavy layers of the Earth are analyzed (mainly the data obtained by Barret, Bollinger, Kokkonen, Eisenberg and Greizen). Calculations made on the basis of different models show that at small distances the observed showers cannot be explained by the usual mechanisms of π -meson production when π -mesons decay in the air. Analysis of possible local processes shows that the showers observed at great depths cannot be due to pairs of μ -mesons produced by photons, μ -mesons originating when π -mesons decay in rock, γ -processes or radiation.

The calculated value for the appearance of μ -meson trident (direct production of μ -pairs in rock) is closer to the experimental shower frequency. However, in this case, too, the experimental value is somewhat greater than the theoretical one.

If this difference is of real significance, one should conclude that additional sources of μ -meson production exist for high energy particle interactions.

Calculated curves for the space distribution of high energy μ -mesons close to the extensive shower axis are presented.

The calculations are based upon the most probable models of the elementary process and in particular upon the Landau theory.

Report presented at the International Cosmic Ray Conference, Moscow, 6-11 July 1959

YEMEL'YANOV, A. A.

THE ROLE OF VISCOSITY IN THE HYDRODYNAMIC THEORY OF MULTIPLE HIGH ENERGY PARTICLE PRODUCTION

A.A. Yemelyanov, D.S. Chernavskiy

The influence of viscosity upon the separation of the relativistic liquid in the multiple production of particles is considered. It turns out that the influence is particularly strong in the front edge region, firstly, because the velocity gradients in that region are maximal, and secondly, the dissipation of energies and the associated production of additional particles strongly affect the energy distribution of secondary particles. The calculation carried out by the method of successive approximations shows that the number of particles in the front edge region which owe their origin to viscosity increases logarithmically with increase in primary energy.

It follows that at sufficiently high energies one particle cannot carry away a substantial fraction of the energy of the entire system (as is the case at energies of the order of 10^{12} - 10^{13} ev).

Report presented at the International Cosmic Ray Conference, Moscow, 6-11, July 1959

YEMEL'YANOV, A.A.; ROZENTAL', I.L.

Two-center model and the hydrodynamic theory of multiple particle
generation. Zhur. eksp. i teor. fiz. 38 no.1:194-197 Jan '60.
(MIRA 14:9)

1. Fizicheskiy institut im. P.N.Lebedeva AN SSSR.
(Nuclear models) (Collisions (Nuclear physics))

83774

S/056/60/039/003/034/045
BC06/B063

24.6900

AUTHORS: Yemel'yanov, A. A., Dovzhenko, O. I.

TITLE: Spatial Distribution of High-energy Nuclear-active
Particles in the Core of an Extensive Atmospheric Shower

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, 1960,
Vol. 39, No. 3(9), pp. 814-821

TEXT: First, the authors discuss several problems relating to the spatial distribution of secondary shower particles. Then, they pass over to the subject proper and first examine the passage of high-energy nuclear-active particles through the atmosphere. In doing so, they proceed from the equation of motion followed by the flux density function $P(E, t, \vec{r}, \vec{\theta})$ of nuclear-active particles obeys. E is the particle energy, t the observational altitude (in nuclear interaction ranges), \vec{r} the radius vector in the plane perpendicular to the shower axis, and $\vec{\theta}$ is a vector in the direction of particle motion. It is assumed that $E \gg Mc^2$ and $\theta \ll 1$. Various relations are derived for the distribution functions, and the mean squares $\theta^2 = P_1(E)/P_0(E)$ and

Card 1/4

Spatial Distribution of High-energy Nuclear-active Particles in the Core of an Extensive Atmospheric Shower

83774
S/056/60/039/003/034/045
B006/B063

$\overline{r^2} = P_3(E)/P_0(E)$ are then examined. $P_0(E) = \int_0^\infty \int_{\vec{r}} \int_{\vec{\Omega}} P(E, t, \vec{r}, \vec{\Omega}) dt d\vec{r} d\vec{\Omega}$,

$P_1(E) = \int_0^\infty \int_{\vec{r}} \int_{\vec{\Omega}} P(E, t, \vec{r}, \vec{\Omega}) \Omega^2 dt d\vec{r} d\vec{\Omega}$, and $P_3(E) = \int_0^\infty \int_{\vec{r}} \int_{\vec{\Omega}} P(E, t, \vec{r}, \vec{\Omega}) r^2 dt d\vec{r} d\vec{\Omega}$.

Then one obtains: $\overline{\Omega^2} \approx 1.1(\mu c^2/E)^2 [b^2 + 0.7(p_L/\mu c)^2]$ and

$\overline{r^2} \approx 3.0(\mu c^2/E)^2 [b^2 + 0.7(p_L/\mu c)^2]$. These two formulas are accurate within +10%. For comparison with the experiment, the mean square radius for the particles must be expressed for an energy higher than a given one;

then one obtains: $\overline{r^2}(\geq E) \approx (\mu c^2/E)^2 [b^2 + 0.7(p_L/\mu c)^2]$. For $E \approx 5 \cdot 10^{11}$ ev,

$b \approx 3$, and $p_L \approx 3\mu c$, the resulting theoretical value for the root-mean-square radius is

$[\overline{r^2}(\geq 10^{12} \text{ ev})]^{1/2} \approx 0.6 \text{ m}$ (at an altitude of 3,860 m (Pamirs)).

Card 2/4

83774

Spatial Distribution of High-energy Nuclear-active Particles in the Core of an Extensive Atmospheric Shower

S/056/60/039/003/034/045
B006/B063

$[\overline{r^2} (\gtrsim 10^{12} \text{ ev})]^{1/2} \gtrsim 1 \text{ m}$ was obtained in the experimental way. The difference between experimental and theoretical values is explained by the fact that while the transverse momentum was taken to be $\sim 3 \mu\text{c}$, it may be considerably higher. For particles with $E \gtrsim 5 \cdot 10^{11} \text{ ev}$, r enters the spatial distribution function as the product rE ; the distribution function is formulated as $P(E, r, t) = P(E, t)F(rE/kE_\alpha)$. $P(E, t)$ is the total

number of nuclear-active particles having an energy between E and $E+dE$. The second term is formulated as follows: $F(rE/kE_\alpha) = e^{-rE/kE_\alpha}$.

Fig 1 shows the experimental and theoretical space distributions of particles with $E \gtrsim 5 \cdot 10^{11} \text{ ev}$ and $E_\alpha \approx 1.5 \cdot 10^9 \text{ ev}$. These values correspond to $b \approx 6$ and $p_\perp \approx 3 \mu\text{c}$. Fig 2 shows the energy spectrum of nuclear-active particles for a distance r of 0 - 1 m and (1 - 2) m from the axis of a

shower with $N = 10^5$. The authors thank G. A. Milekhin, G. T. Zatspin, S. I. Nikol'skiy and I. L. Rozental' for discussions; A. A. Pomanskiy for submitting results prior to publication; and G. Ya. Goryacheva and G. V. Minayeva for

Card 3/4

Spatial Distribution of High-energy Nuclear-
active Particles in the Core of an Extensive
Atmospheric Shower

83774

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B006/B063

numerical computations. I. Ya. Pomeranchuk, A. B. Migdal, and L. D. Landau
are mentioned. There are 2 figures and 14 references: 11 Soviet,
1 Italian, and 1 Japanese.

ASSOCIATION: Fizicheskiy Institut im. P. N. Lebedeva Akademii nauk SSSR
(Institute of Physics imeni P. N. Lebedev of the Academy
of Sciences USSR)

SUBMITTED: April 20, 1960

Card 4/4

YEMEL'YANOV, A. A.

Cand Phys-Math Sci - (diss) "Studies on the hydrodynamic theory of multiple formation of particles." Moscow, 1961. 12 pp; (Ministry of Higher and Secondary Specialist Education USSR, Moscow Order of Lenin and Order of Labor Red Banner State University imeni M. V. Lomonosov, Scientific Research Institute of Nuclear Physics of Moscow State University); 100 copies; price not given; bibliography at end of text (31 entries); (KL, 5-61 sup, 172)

YEMEL'YANOV, A. A. and ROZENTAL, I. L.

"Interpretation of the Two-Centre Model within the Hydrodynamical Theory"

Report presented at the International Conference on Cosmic Rays and Earth Storm, 4-15 Sep 61, Kyoto, Japan.

P. N. Lebedev Physical Institute, Academy of Sciences of the USSR

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26718
S/056/61/041/005/033/038
B112/B104

AUTHOR: Yemel'yanov, A. A.

TITLE: The theory of collisions between nucleons and heavy nuclei

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41,
no. 5(11), 1961, 1673-1674

TEXT: In continuation of studies made by S. Z. Belen'kiy, G. A. Milekhin (ZhETF, 29, 20, 1955) and G. A. Milekhin (ZhETF, 35, 1185, 1958) the author studied the symmetry properties of the shower-particle distribution on the basis of the theory of hydrodynamics by L. D. Landau (Izv. AN SSSR, seriya fiz., 17, 651, 1953). Only with $n > 3.7$ (n is the number of nucleons in the counting tube) a secondary particle domain is formed. According to G. A. Milekhin (ZhETF, 31, 278, 1956) the angular distribution of the secondary particles can be calculated if a solution of the equation by I. M. Chalatnikov (ZhETF, 26, 529, 1954):

$$3 \partial^2 \chi / \partial \eta^2 \quad \partial^2 \chi / \partial y^2 - 2 \partial \chi / \partial y = 0$$

Card 1/2

26718

S/056/61/041/005/033/038
B112/B104

The theory of collisions between

(χ is the hydrodynamic potential, $\eta = \text{Arth } v$, v is the velocity referred to the light velocity as unit velocity, $y = \ln(T/T_0)$, T is the temperature of the medium) is known for the secondary-particle domain. The author demonstrates that every counting system in which the angular distribution of the secondary particles has forward - backward symmetry moves with a velocity

$$v = \text{th} \left[\frac{4(n+1)+3\sqrt{3}}{2(7+4\sqrt{3})} - \text{Arth} \left(\frac{n-1}{n+1} \right) \right]$$

relative to the center of mass system, e.g. with a velocity $V = 0.4$ for $n = 6$. The author thanks G. A. Milekhin for discussions. There are 8 references: 7 Soviet and 1 non-Soviet.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR
(Physics Institute imeni P. N. Lebedev of the Academy of Sciences USSR)

SUBMITTED: June 21, 1961

Card 2/2

34008

S/056/62/042/001/026/048
B155/B108

24.4400

AUTHOR: Yemel'yanov, A. A.

TITLE: Interpretation of the two-center model in the hydrodynamic theory

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 42, no. 1, 1962, 171 - 172

TEXT: The author describes "double-humped" showers, i. e., showers with two maxima in the angular particle distribution by means of the hydrodynamic theory. The model used is an ideal meson liquid in which the energy dissipation of a simple wave resulting from the effect of viscosity is calculated. Energy dissipation near the front of the meson cloud causes the formation of additional particles. Since these particles are the fastest of all they cause the two maxima in the angular distribution of the shower particles. The calculations were made for two possible temperature dependences of viscosity: ✓

(1) $\eta = \text{const.}$ (2) $\eta \propto T^3$ (T is the temperature of the medium). With Card 1/3

34008

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B155/B108

Interpretation of the ...

$\beta = \text{const}$, $\Delta N = 0.4(\pi a^2 \beta / \mu_\pi) \ln(E_0 / \mu_\pi)$. μ_π is the pion mass, ΔN is the number of additional particles, M is the nucleon mass, $M = c = h = 1$, πa^2 is the interaction cross section; the relation holds strictly for $\Delta N/N \ll 1$, but it can still be used for $\Delta N/N \lesssim 1$. If the meson cloud is an ideal gas, $\beta = \mu_\pi / \pi a^2$ and $\Delta N = 0.4 \ln(E_0 / \mu_\pi)$. $D = (N_e - N_1) / n_s$ is a measure of the deviation of the angular particle distribution from the Gaussian shape. N_1 is the particle number in the interval $x = \pm 0.6746$ with $x = \log \tan \varphi_L$ (φ_L is the angle of emission in the laboratory system, 6° is the dispersion of the angular distribution, and N_e is the number of particles outside the interval x . n_s is the multiplicity of the process. D slowly decreases as the energy E_0 increases. For $T \gg 1$, $\beta \sim T^3$ and $\Delta N = k T_0^3$ (T_0 is the initial temperature, $k \sim 1$ is an experimental constant). The energy dependence of the multiplicity of the elementary event is

Card 2/3

34008

Interpretation of the ...

S/056/62/042/001/026/048
B155/B108

$n_s = k_0 E_0^{1/4} + k E_0^{1/2}$. Depending on the value of k and on the energy interval considered, the multiplicity lies between the functions $\sim E^{1/4}$ (according to the Fermi-Landau theory) and $\sim E^{1/2}$ according to the Heisenberg theory. The model with $\int \sim T^3$ can be applied only for high E_0 . The interpretation suggested for "double-humped" showers can be applied also to nucleon-nucleus and nucleon-nucleon collisions. The author thanks I. L. Rozental' for his advice.

ASSOCIATION: Fizicheskii institut im. P. N. Lebedeva Akademii nauk SSSR
(Physics Institute imeni P. N. Lebedev of the Academy of Sciences USSR) ✓

SUBMITTED: June 20, 1961

Card 3/3

MANSHILIN, V.V.; AGAFONOV, A.V.; MANAKOV, N.Kh.; VASILENKO, V.P.;
MASLOV, I.Ya.; KNYAZEV, V.S.; STEPANENKO, I.A.; Prinimali
uchastiye: VAYL', Yu.K.; NEMETS, L.L.; BELOUSOVA, I.V.;
STOLYARENKO, Ye.G.; YEMEL'YANOV, A.A.; RYABOV, V.M.;
BEREZOVSKIY, V.D.; ZEFIROVA, Ye.G.; CHELOGUZOVA, Ye.F.;
SOLOTSINSKIY, S.Ye.; BOL'SHAKOVA, K.A.; KHRAMOV, A.Ye.

Catalytic cracking of raw heavy distillates on a microspheric
catalyst of Troshkovskiy clay. Khim. i tekhn. topl. i masel. 8
no.3:1-6 Mr '63. (MIRA 16:4)

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nefti i gazov i polucheniyu iskusstvennogo zhidkogo topliva.
(Cracking process) (Catalysts)

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(Bricklaying) (Building blocks)

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(MIRA 10:10)

1. TSentral'nyy nauchno-issledovatel'skiy institut stroitel'noy
konstruktsii Akademii stroitel'stva i arkhitektury SSSR.
(Building blocks) (Vibration)

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Effect of vibration rates on the strength of bricklaying. Stroitel'
prom. 36 no.6:27-30 Je '58. (MIRA 11:6)

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(Bricklaying) (Vibration)

YEMEL'YANOV, A.A., inzh.

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Prom.stroi. 38 no.4:61-63 '60. (MIRA 13:8)
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(Greenland—Foundations)

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KHACHATUROV, T.S., otv. red. Prinsipialni uchastiye: BOR, M.Z., kand. ekon. i istor. nauk, red.; BOL'SHAKOV, Ya.A., red.; DYLEVSKIY, A.A., red.; YEMEL'YANOV, A.D., kand. ekon. nauk, red.; KRASOVSKIY, V.P., red.; SHUSTER, A.I., red.

[Methodology for determining the economic efficiency of introducing new machinery, mechanization and automation of industrial production processes. Approved by the State Planning Commission of the U.S.S.R. on December 9, 1961] Metodika opredeleniya ekonomicheskoi effektivnosti vnedreniya novoi tekhniki, mekhanizatsii i avtomatizatsii proizvodstvennykh protsessov v promyshlennosti. Utverzhdeno 9 dekabria 1961 g. Moskva, Izd-vo Akad. nauk SSSR, 1962. 45 p. (MIRA 15:11)

1. Russia (1923- U.S.S.R.) Gosudarstvennaya planovaya komissiya.
2. Chlen-korrespondent Akademii nauk SSSR (for Khachaturov).
3. Gosudarstvennyy planovyy komitet Soveta Ministrov SSSR (for Bor, Dylevskiy).
4. Moskovskiy oblastnoy sovet narodnogo khozyaystva (for Bol'shakov).
5. Nauchno-issledovatel'skiy ekonomicheskii institut Gosudarstvennogo ekonomicheskogo soveta pri Sovete Ministrov SSSR po tekushchemu planirovaniyu narodnogo khozyaystva (for Yemel'yanov, Krasovskiy).
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(Technological innovations) (Automation)

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1952. 117 p. (54-18434)

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For a clear organization of material supplies. Ryb. khoz., 28 No. 3, 1952

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Mekhanizatsiia proizvodstva v SSSR i metody opredeleniya ee effektivnosti
(Mechanization of production in the U.S.S.R. and methods for determining
its effectiveness). Moskva, Gospolitizdat, 1954.

SO: Monthly List of Russian Accessions, Vol. 7, No. 7, Oct. 1954

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Finansirovaniye i kreditovaniye rysopromyshlennykh predpriyatiy (Financing and crediting of fish industrial enterprises) Moskva, Pishchepromizdat, 1955.

199 p. tables.

YEMEL'YANOV, Aleksey Davidovich

[Economic efficiency of the automation of industrial production]
Ekonomicheskaya effektivnost' avtomatizatsii promyshlennogo pro-
izvodstva. Moskva, Mashgiz, 1960. 195 p.
(Automation)

(MIRA 14:2)

PHASE I BOOK EXPLOITATION

SOV/5359

Yemel'yanov, Aleksey Davidovich

Ekonomicheskaya effektivnost' avtomatizatsii promyshlennogo proizvodstva (Economic Efficiency of Automation in Industrial Production) Moscow, Mashgiz, 1960. 195 p. 6,000 copies printed.

Reviewers: V.I. Petrov, Candidate of Technical Sciences, and A.I. Shuster, Engineer; Ed.: V.A. Letenko, Candidate of Economic Sciences; Ed. of Publishing House: A.A. Salyanskiy; Tech. Ed.: G.V. Smirnova; Managing Ed. for Literature on the Economics and Organization of Production (Mashgiz): T.D. Saksaganskiy.

PURPOSE: This book is intended for economists, engineering-technical, and managerial personnel of establishments, ministries, Councils of the National Economy, for personnel of scientific-research and design institutes and for teachers of educational institutions.

COVERAGE: The book deals with the nature of production automation, its significance in industrial development, and the basic premises for speedy automation of production in the machine-building industry. The book presents materials on

Card 1/6

Economic Efficiency (Cont.)

SOV/5359

the practical determination of the economic efficiency of introducing modern engineering methods, mainly the advantages of industrial automation, on detecting errors in economic analysis, and on methods for determining economic efficiency. The book was approved by the Nauchno-issledovatel'skiy ekonomicheskii institut, Gosplan SSSR (Scientific-Research Economic Institute of the State Planning Committee of the Council of Ministers, USSR). No personalities are mentioned. There are 31 references, all Soviet.

TABLE OF CONTENTS:

Foreword

3

PART I. AUTOMATION OF INDUSTRIAL PRODUCTION

Ch. I. Nature, Significance, and Basic Premises of Automation of USSR Industrial Production

5

Ch. II. Characteristics of the Economic Efficiency of the Automation of Industrial Processes

16

Card 2/6

YEMEL'YANOV, A. D.

PHASE I BOX EXPLOITATION	SOV/5291
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Avtomatizatsiya mashinostroyeniya protsessov, t. III: Obrabotka rezaniyem i obshchiye voprosy avtomatizatsii (Automation of Machine-Building Processes. V. 3: Metal Cutting and General Automation Problems) Moscow, Izd-vo AN SSSR, 1960. 296 p. (Series: Its: Trudy, t. 3) 4,700 copies printed.	
Sponsoring Agency: Akademiya nauk SSSR, Institut mashinovedeniya. Komissiya po tekhnologii mashinostroyeniya.	
Resp. Ed.: V. I. Dikushin, Academician; Ed. of Publishing House: V. A. Kotov; Tech. Ed.: I. P. Kuz'min.	
PURPOSE: This collection of articles is intended for technical personnel concerned with the automation of the machine industry.	
COVERAGE: This is Volume III of the transactions of the Second Conference on the Full Mechanization and Automation of Manufacturing Processes in the Machine Industry, held September 25-29, 1956. The transactions have been published in three volumes. Volume I deals with the hot processing of metals, and volume II, with the automation and control of machines. The present volume deals with the automation of metal machining and work-hardening, and with general problems encountered in automation. The transactions on the automation of metal machining processes were published under the supervision of P. S. Den'yanok and A. M. Karatkin, and those on the automation of work-hardening processes, under the supervision of E. A. Safel' and M. O. Yakobson. No personalities are mentioned. There are no references.	
Eppaher, Yu. B. On the Operation of the Tools in Automatic Production Lines	32
Lydmirskiy, D. O. Experience of the SEB-6 (Special Design Office No. 6) in Designing and Mastering Automatic Production-Line Operations	43
Yegorov, B. V. Automation of Universal Metal-Cutting Machines for Mass Production	53
Meklyudov, G. I. Automatic Machining of Parts Used in Matchmaking	62
Automation of Machine-Building Processes (Cont.)	SOV/5291
Yakobson, M. O. Automated Production of Gears and Splined Shafts	66
Koshkin, L. N. Automation of Manufacturing Processes Based on Rotary Transfer Machines	82
Rykin, G. M. Metal-Cutting Tools for Automated Production	98
Derbisher, A. V. Automation of Manufacturing Processes at the I GPZ (1st State Bearing Plant)	111
Sokolov, Ye. P. Experience in the Operation of Semiautomatic Hydraulic Copying Machines	124
Vasil'yev, V. S. Automatic Balancing Machines	129
Kuritsayna, A. D. New Advanced Processes for the Mass Production of Sliding Bearings	141
Card 4/7	

Automation of Machine-Building Processes (Cont.)	SOV/5291
Fil'min, V. P. Securing Stability in Motion of Parts During Centerless Grinding	149
Zolotykh, B. M. Present State of and Prospects for Electro-spark Machining of Metals and Methods for Its Automation	156
Rosenberg, L. D., and D. P. Yakhimovich. Use of Ultrasonics for Machining Hard and Brittle Materials	164
Zhelezov, Ye. S. Automation of the Process for Grinding Bearing Rings	173
Dashchenko, A. I. Investigating the Process Parameters of Small Semi-automatic Unit-Head Machine Tools	186
PART II. AUTOMATION OF SURFACE-HARDENING PROCESSES	
Chirikov, V. T. Controlling the Carburizing Process	203
Card 5/7	
Automation of Machine-Building Processes (Cont.)	SOV/5291
Nikol'skiy, A. P. Units for Quenching and Tempering by High-Frequency Heating in Automatic Production Lines	211
Larkin, P. R. Automatic Unit for the Shot Peening of Leaf Springs	217
Grigulis, Yu. K. Automating the Thickness Control of Surface Films	222
PART III. GENERAL PROBLEMS IN AUTOMATION	
Blagonravov, A. A. [Academician]. Objectives of Automating the Processes in Machine Building	229
Dikushin, V. I. [Academician]. Problem of Automation in Machine Building	231
Kulebakin, V. S. [Academician]. On Methods of Improving Automatic Systems	246
Automation of Machine-Building Processes (Cont.)	SOV/5291
Klimenko, K. I. Economic Effectiveness of Automation and Methods of Determining It	272
Yemel'yanov, A. D. Basic Principles of Determining the Economic Effectiveness in the Automation of Production	277
Ioannesyants, M. Ya. Investment per Unit of [Rated] Horsepower in the Automobile Industry	285

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Basic rules of the methodology for determining the economic
efficiency of mechanization and automation in machinery manufacturing.
Nauch.trudy MIEI no.18:134-147 '61. (MIRA 15:2)
(Machinery industry) (Automation)

YEMEL'YANOV, A.D., red.; TOLKACHEV, A.S., red.; KONIKOV, L.A., red.;
PONOMAREVA, A.A., tekhn.red.

[Economic efficiency of production mechanization and automation]
Ekonomicheskaya effektivnost' mekhanizatsii i avtomatizatsii
proizvodstva. Pod red. A.D.Emel'ianova i A.S.Tolkacheva. Moskva,
Izd-vo ekon.lit-ry, 1962. 347 p. (MIRA 15:4)

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2. Nauchno-issledovatel'skiy ekonomicheskiy institut Gosekonom-
soвета SSSR (for Yemel'yanov, Tolkachev).
(Automation) (Machinery in industry)

YEMEL'YANOV, A.F.

Modernization of the headstock of small lathes, used in timepiece production.
Stan.1 instr. vol. 24 no.9:26 8 '53.

(MLRA 6:10)

(Lathes)

KARATETSKIY, S.S.; YEMEL'YANOV, A.F.

Effect of high-frequency coupling between detectors on the accuracy of a correlation method for measuring microwave generator fluctuations. Radiotekh. i elektron. 7 no.11:1896-1900 N '62. (MIRA 15:11)

(Microwave measurements) (Oscillators, Electric)

9.4220

77788

SOV/109-5-2-21/26

AUTHORS:

Kornilov, S. A., Yemel'yanov, A. F.

TITLE:

Experimental Investigation of a Klystron Frequency Divider With Preliminary Bunching (Brief Communication)

PERIODICAL:

Radiotekhnika i elektronika, 1960, Vol 5, Nr 2, pp 336-338 (USSR)

ABSTRACT:

Reference is made to previous work by the first-named author (this Journal, 1958, 3, 4, 522) regarding an ordinary klystron with biharmonic resonator and a triple-grid reflex klystron. A two-fold frequency division was described in the above articles. The subject of the present work is a study of klystron efficiency for frequency division by factors higher than two. A variant of klystron divider characterized utilization of preliminary bunching at governing frequency with a regenerative reflex oscillator was selected for tests. Such a klystron type is shown in Fig. 1.

Card 1/7

Experimental Investigation of a Klystron
Frequency Divider With Preliminary Bunching
(Brief Communication)

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SOV/109-5-2-21/26

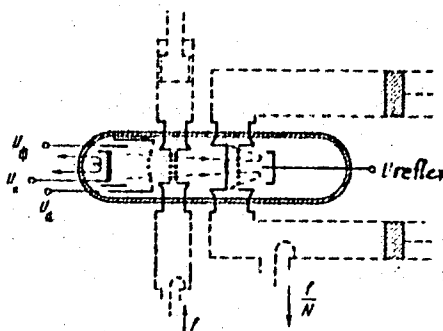


Fig. 1. Design of dividing klystron.

Frequency oscillations f , which are to be divided, enter input resonator and modulate the electron beam velocity. The bunched beam governs the regeneration process at the divider output, which

Card 2/7

Experimental Investigation of a Klystron
Frequency Divider With Preliminary Bunching
(Brief Communication)

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SOV/109-5-2-21/26

works on the principle of a reflex klystron, regenerated at a lower frequency f/N , where N is the frequency divisor. Electron beam current is controlled by the electron gun anode potential U_a . Focusing is assured by selection of an electrostatic potential (U) for the focusing ring. The klystron was designed for frequency division at 3,000 mc. The division was controlled by tuning a broad-band output resonator. The experiment used a saw-tooth voltage modulation. A two-fold division could be achieved both in auto-oscillation (synchronization) and potential (2nd type resonance) circuits. For divisors higher than 2, only synchronization could be achieved. Figure 3 shows the variation of synchronization band Δf and of synchronized oscillation power $P_{f/N}$ for $N = 3$ on input signal P_f power at different currents in input resonator gap. A common feature of these curves is the presence of a "ceiling".

Card 3/7

Experimental Investigation of a Klystron
Frequency Divider With Preliminary Bunching
(Brief Communication)

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SOV/109-5-2-21/26

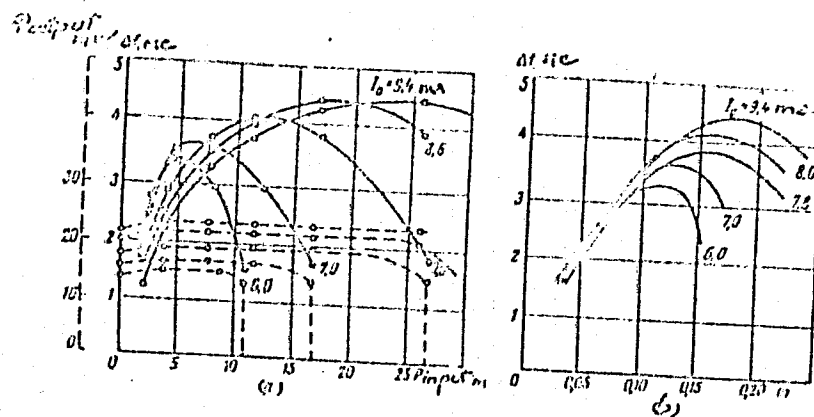


Fig. 3. (a) Dependence of synchronization band f on input power P_{in} at different currents, I_0 , in klystron output gap; (b) dependence of synchronization band on modulation coefficient of beam for density m .

Card 4/7

Experimental Investigation of a Klystron
Frequency Divider With Preliminary Bunching
(Brief Communication)

77788
SOV/109-5-2-21/26

Figure 3b shows the same dependences as functions of beam modulation coefficient:

$$m = X_0 \left[1 - X_0 \frac{(hl)^2}{12} \right] \frac{\sin hl}{hl},$$

where X_0 is bunching parameter, volume charge not dis counted; h , debunching parameter; l , length of drift. All the above-shown curves were plotted at reflector potential -20 v (in the center of oscillation zone). Practically, a complete reflection of electrons was observed. Figure 4 shows the dependence of synchroniza- tion band on the divisor at retuning of the output resonator. Experimental results indicate that klystron principle can be applied successfully for frequency division with high divisors. As transmission coefficient of a klystron divider is greater than 1, a cascade connection of several dividers is possible.

Card 5/7

Experimental Investigation of a Klystron
Frequency Divider With Preliminary Bunching
(Brief Communication)

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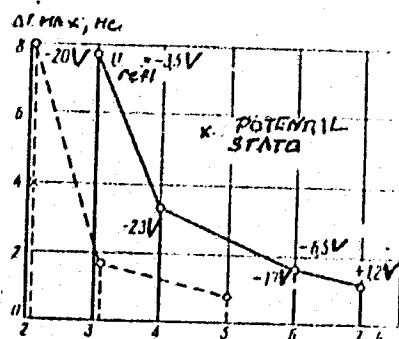


Fig. 4. Dependence of maximum synchronization band Δf_{\max} on divisor N .

Card 6/7

Experimental Investigation of a Klystron
Frequency Divider With Preliminary Bunching
(Brief Communication)

77788
SOV/109-5-2-21/26

There are 4 figures; and 4 references, 3 Soviet, 1 U.S.
The U.S. reference is: T. J. Bridges, A Parametric
Electron Beam Amplifier, Proc. I.R.E. 1958, 46, 2,
494.

SUBMITTED: May 26, 1959

Card 7/7

YEMEL'YANOV, A.F.

New genera and species of leafhoppers (Auchenorrhyncha, Jassidae)
from Kazakhstan. Ent. oboz. 38 no.4:833-839 '59 (MIRA 13:3)

1. Zoologicheskiy institut AN SSSR, Leningrad.
(Kazakhstan--Leafhoppers)

ARNOL'DI, L.V.; BORKHSENIUS, N.S.; GUR'YEVA, Ye.L.; DERBENEVA, N.N.;
YEMEL'YANOV, A.F.; KERZHNER, I.M.; KUZNETSOV, V.I.; LISINA,
L.M.; MISHCHENKO, L.L.; NARCHUK, E.P.; SHAPIRO, I.D.; SHAPOSHNI-
KOV, G.Kh.; SHTAKEL'BERG, A.A.; PUKHAL'SKAYA, L.F., red.isd-va;
KRUGLIKOVA, N.A., tekhn.red.

[Insect pests of corn in the U.S.S.R.; reference book] Naseko-
mye, vrediashchie kukuruze v SSSR; spravochnik. Moskva, 1960.
227 p. (MIRA 13:3)

1. Akademiya nauk SSSR. Zoologicheskii institut. 2. Zoologi-
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Dorbenova, Yemel'yanov, Kerzhner, Kuznetsov, Mishchenko, Narchuk,
Shaposhnikov, Shtakel'berg). 3. Vsesoyuznyi institut zashchity
rasteniy Vsesoyuznoy akademii sel'skokhozyaystvennykh nauk imeni
V.I.Lenina (for Lisina, Shapiro).

(Corn (Maize)--Diseases and pests)
(Insects, Injurious and beneficial)

YEMEL'YANOV, A.F.

New genera and species of leafhoppers (Auchenorrhyncha, Jassidae)
from the U.S.S.R. Ent. oboz. 40 no.1:120-130 '61. (MIRA 14:4)

1. Zoologicheskii institut AN SSSR, Leningrad.
(Leafhoppers)

YEMEL'YANOV, A. F.

Materials on the taxonomy of Palearctic leafhoppers (Auchenor-
rhyncha, Euscelinae). Trudy Zool. inst. 30:156-184 '62.
(MIRA 15:10)

(Leafhoppers)

YEMEL'YANOV, A.F.

New tribes of leafhoppers of the subfamily Euscelinae
(Auchenorrhyncha, Cicadellidae). Ent. oboz. 41
no.2:388-397 '62. (MIRA 15:11)

1. Zoologicheskiy institut AN SSSR, Leningrad.
(Leafhoppers)

YEMEL'YANOV, A.F.

New genus of leafhoppers *Selachina* gen. n. (Cicadellidae,
Auchenorrhyncha). Zool. zhur. 41 no.5:767-770 My '62.
(MIRA 15:6)

1. Zoological Institute, Academy of Sciences of the U.S.S.R.,
Leningrad.

(Leafhoppers)

YEMEL'YANOV, A.F.

New genus of leafhoppers of the subfamily Ulopinae (Auchenorrhyncha, Cicadellidae). Zool. zhur. 42 no.10:1581-1582 '63. (MIRA 16:12)

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YEMEL'YANOV, A.F.

New cicads from Kazakhstan (Homoptera, Auchenorrhyncha). Trudy
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New species of steppe leafhoppers (Homoptera, Cicadellidae) from Transbaikalia and other eastern regions of the U.S.S.R. Ent. oboz. 43 no.3: 626-632 '64.
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1. Zoological Institute, Academy of Sciences of the U.S.S.R., Leningrad.

YEMEL'YANOV, A.F.

Essential differences between the consortia of dominants and "assectators" as revealed by the distribution of oligophagous leafhoppers among plants. Bot.zhur. 50 no.2:221-223 F '65. (MIRA 18:12)

1. Zoologicheskii institut AN SSSR, Leningrad. Submitted August 14, 1963.

L 27780-66 EWA(h)/ENT(1) JM

ACC NR: AP6004827

SOURCE CODE: UR/0108/66/021/001/0054/0059 36

AUTHOR: Karatetskiy, S. S. (Active member); Yemel'yanov, A. F. (Active member)

ORG: Scientific and Technical Society of Radio Engineering and Electrocommunication
(Nauchno-tekhnicheskoye obshchestvo radiotekhniki i elektrosvyazi)

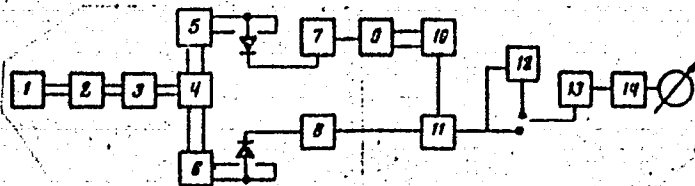
TITLE: Experimental investigation of fluctuations in reflex klystrons 25

SOURCE: Radiotekhnika, v. 21, no. 1, 1966, 54-59

TOPIC TAGS: reflex klystron,
band

SHF tube, signal detection, frequency

ABSTRACT: As the results reported by various researchers have differed widely, a special investigation of 1-f fluctuation of the reflex klystron has been organized. To



eliminate the error associated with measuring-detector noise, a preliminary detection by two independent detectors and a subsequent measuring of the correlation coefficient of the two

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UDC: 621.385

L 27780-66

ACC NR: AP6004827

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signals were used. Energy from the klystron oscillator 1 being tested is applied, via waveguide 2-3, to two amplitude detectors by means of bridge-type branching device 4. Ferrite isolators 5 and 6 preclude coupling between the detectors. From the first detector, the signal is fed to amplifier 7 with paraphase final stage 9; from the second detector, the signal is fed to amplifier 8. Switch 10 applies both signals alternatively to summator 11. Spectrum analyzer 12 isolates the frequency band subject to fluctuation. Noise power is measured by square-law detector 13 terminated with averaging filter 14. It was found that: (1) The oscillator stability depends on the klystron load; (2) The amplitude stability of the oscillator is very high ($\chi = 158$ db/cps); (3) The frequency stability is much lower ($\chi = 90$ db/cps at 10 kc). Orig. art. has: 8 figures, 4 formulas, and 1 table.

SUB CODE: 09 / SUBM DATE: 13Jan64 / ORIG REF: 005 / OTH REF: 003

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L 10455-67 EMT(1)

ACC NR: AP6023876

SOURCE CODE: UR/0109/66/011/007/1311/1312

AUTHOR: Borisova, L. I.; Yemel'yanov, A. F.; Karatetskiy, S. S.

38

ORG: none

TITLE: Effect of h-f load on the sensitivity of a crystal detector²⁵ when the harmonic-signal amplitude fluctuates

SOURCE: Radiotekhnika i elektronika, v. 11, no. 7, 1966, 1311-1312

TOPIC TAGS: crystal detector; signal detection

ABSTRACT: An experimental proof is reported of the following: (1) Reflected waves occur in the crystal-detector waveguide whose amplitude modulation is correlated with the AM of the signal being detected; (2) Because of those waves, the excess noise level, signal level, and detector sensitivity vary depending on the input impedance of the detector waveguide. Measurements were taken at 15 kc; the passband of l-f amplifiers was 3 kc. Orig. art. has: 2 figures.

SUB CODE: 09 / SUBM DATE: 21Jun65 / ORIG REF: 002

Card 1/1 ^{67p}

UDC:621.378.233.089.52

25

EMEL'YANOV, A. G.

Indanthrene and indigoid dyes of domestic production

for smooth dyeing and printing. A. G. Emel'yanov. *Khlopchatobumazhnaya Prom.* 1939, No. 5, 47-50; *Khim. Referat. Zhur.* 1939, No. 10, 114. — Expts. under plant conditions and the properties of the domestic Thioindigo Red S (Thioindigo R) and Indigo Light Blue B (Bromo Indigo) dyes are described. The properties and methods of application are given for Indigo Yellow Kh (Heliindon Yellow), Indigo Golden Yellow ZKh (Indanthrene of Golden Yellow OK), Indigo Red KKh (Indanthrene of Red RK), Indigo Dark-Blue O (Indanthrene of Dark-Blue RO), Indigo Blue O (Indanthrene of Blue B), Indigo Light-Blue O (chloroindanthrene of Light-Blue B), Indigo Bright-Green S (Indanthrene of Brilliant Green B), Indigo Black S (Indanthrene of L.I. or 2B) and some of their mixts. The I. G. "Suprafix" dyes were tested in the lab. and, except for a rapid reducibility, no advantages over the powdered indigo dyes of the anthraquinone series were found.

W. R. Henn

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Za vysokoye khudozhestvennoye oformleniye tkaney. (Shuyak. Ob"edin. fabrika).
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Elizabeth Barakash...

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